

GETTER MATERIALS FOR DEOXYGENATING AMMONIA/OXYGEN GAS MIXTURES AT LOW TEMPERATURE

ABSTRACT OF THE DISCLOSURE

A method for removing oxygen from ammonia at low temperature is described. In one
5 embodiment, oxygen contaminated ammonia is contacted with a getter material that includes iron
and manganese that sorbs oxygen to yield ammonia that is substantially oxygen free. In one
embodiment, the process of contacting ammonia with the getter material takes place at about 25 °C.
In another embodiment the weight ratio between iron and manganese is about 7:1. In another
embodiment, the getter material is dispersed on an inert support of specific surface greater than
10 100 m²/g. In one embodiment, impure ammonia is contacted with getter material including iron
and manganese that sorbs oxygen and with a drying agent that absorbs water to yield
deoxygenated anhydrous ammonia. In yet another embodiment, an apparatus consisting of a gas
inlet, gas purification chamber and gas outlet that deoxygenates ammonia when charged with getter
material that includes iron and manganese is described. In one embodiment, getter material and
15 drying agent are mixed together inside the gas purification chamber. In another aspect a method for
producing semiconductor devices with high purity ammonia is described.